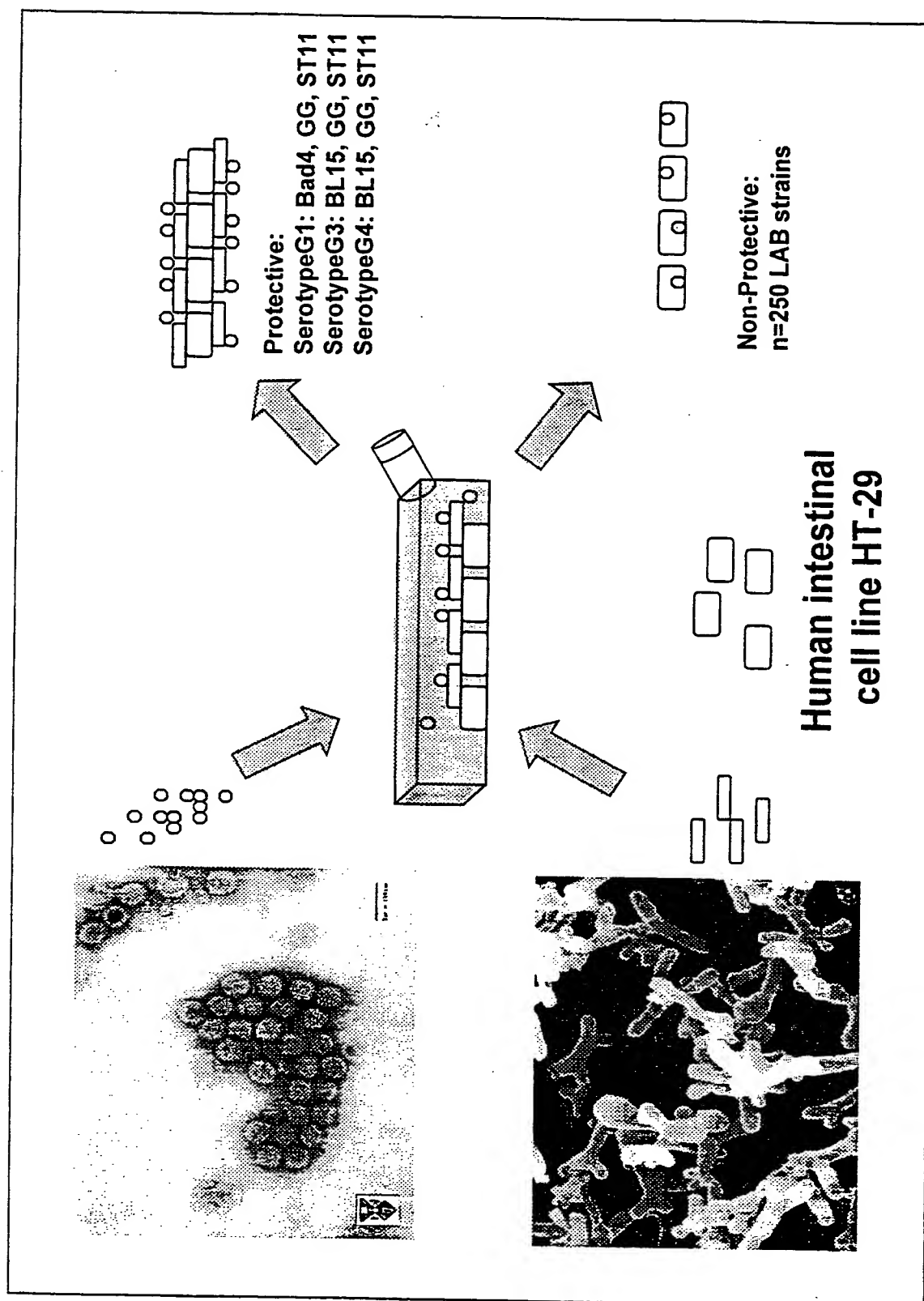


**PCT**WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau

## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

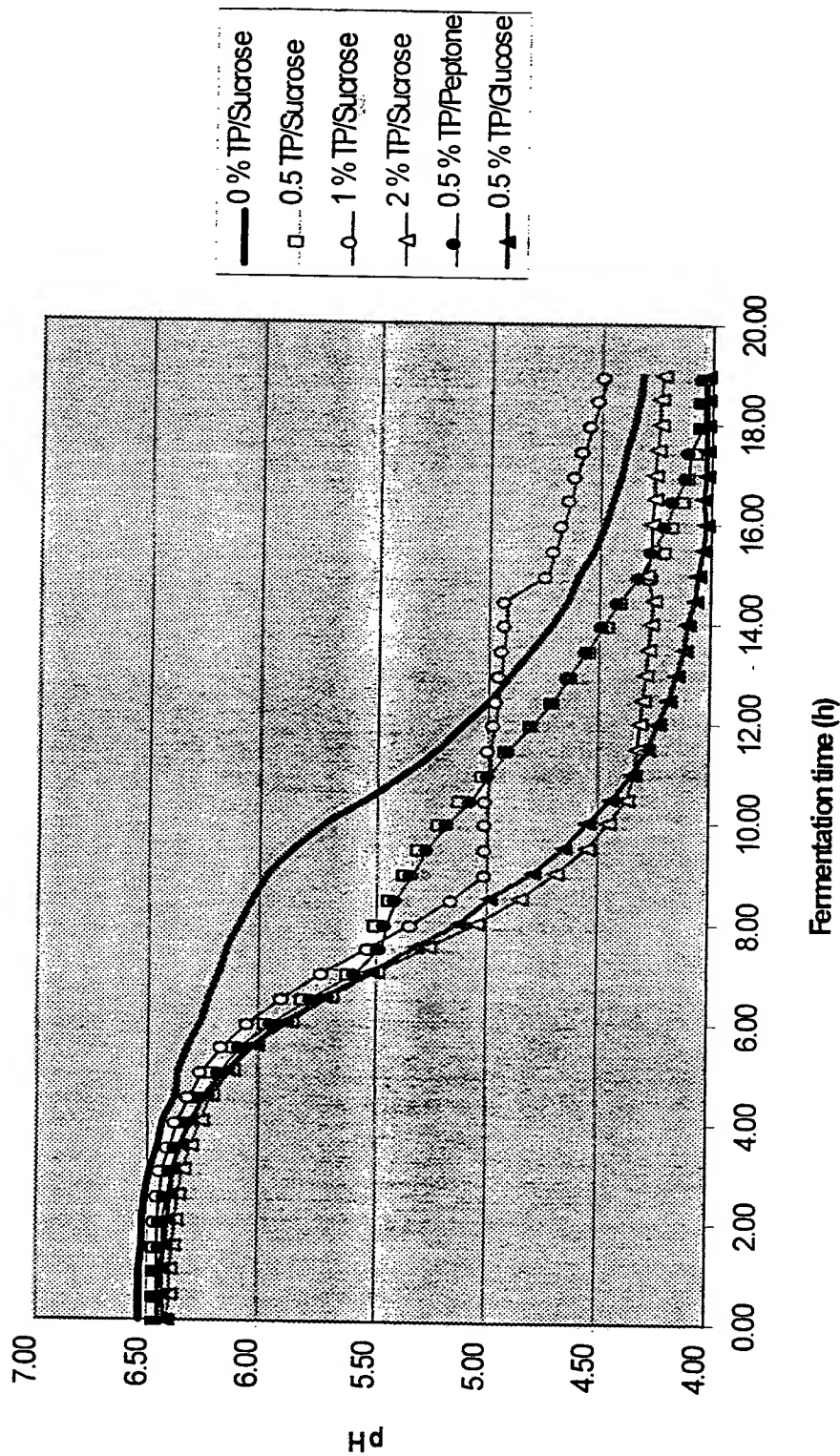
(51) International Patent Classification <sup>7</sup> : <b>A61K 35/74, C12N 1/20, A23L 1/29, A23C 9/152 // (C12N 1/20, C12R 1:225)</b>		<b>A1</b>	(11) International Publication Number: <b>WO 00/53201</b>
			(43) International Publication Date: 14 September 2000 (14.09.00)
(21) International Application Number: <b>PCT/EP00/01797</b>		(81) Designated States: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).	
(22) International Filing Date: <b>2 March 2000 (02.03.00)</b>			
(30) Priority Data: 99104924.8 11 March 1999 (11.03.99) EP			
(71) Applicant (for all designated States except US): SOCIETE DES PRODUITS NESTLE S.A. [CH/CH]; P.O. Box 353, CH-1800 Vevey (CH).			
(72) Inventors; and			
(75) Inventors/Applicants (for US only): RENIERO, Roberto [IT/CH]; 24, chemin Paudille, CH-1801 Le Mont-Pelérin (CH). BRUESSOW, Harald [DE/CH]; Chemin de la Chaumény 13, CH-1814 La Tour de Peilz (CH). ROCHAT, Florence [CH/CH]; Quartier des Tilleuls 6, CH-1820 Montreux (CH). VON DER WEID, Thierry [CH/CH]; Rte de la Bordinette 10, CH-1094 Paudex (CH). BLUM-SPERISEN, Stéphanie [DE/CH]; Av. des Mousquines 13, CH-1005 Lausanne (CH).		<b>Published</b> <i>With international search report. With an indication in relation to deposited biological material furnished under Rule 13bis separately from the description.</i>	
(74) Agent: STRAUS, Alexander; Becker, Kurig, Straus, Bavarias-trasse 7, D-80336 München (DE).			
(54) Title: LACTIC ACID BACTERIA STRAINS CAPABLE OF PREVENTING DIARRHOEA			
(57) Abstract <p>The present invention pertains to novel microorganisms of the family Lactobacillaceae, especially to microorganisms of the genus Lactobacillus, that are useful in preventing or treating diarrhoea. In particular, the present invention relates to the use of said micro-organisms for the preparation of an ingestible support and to a composition containing the same.</p>			

Fig. 1



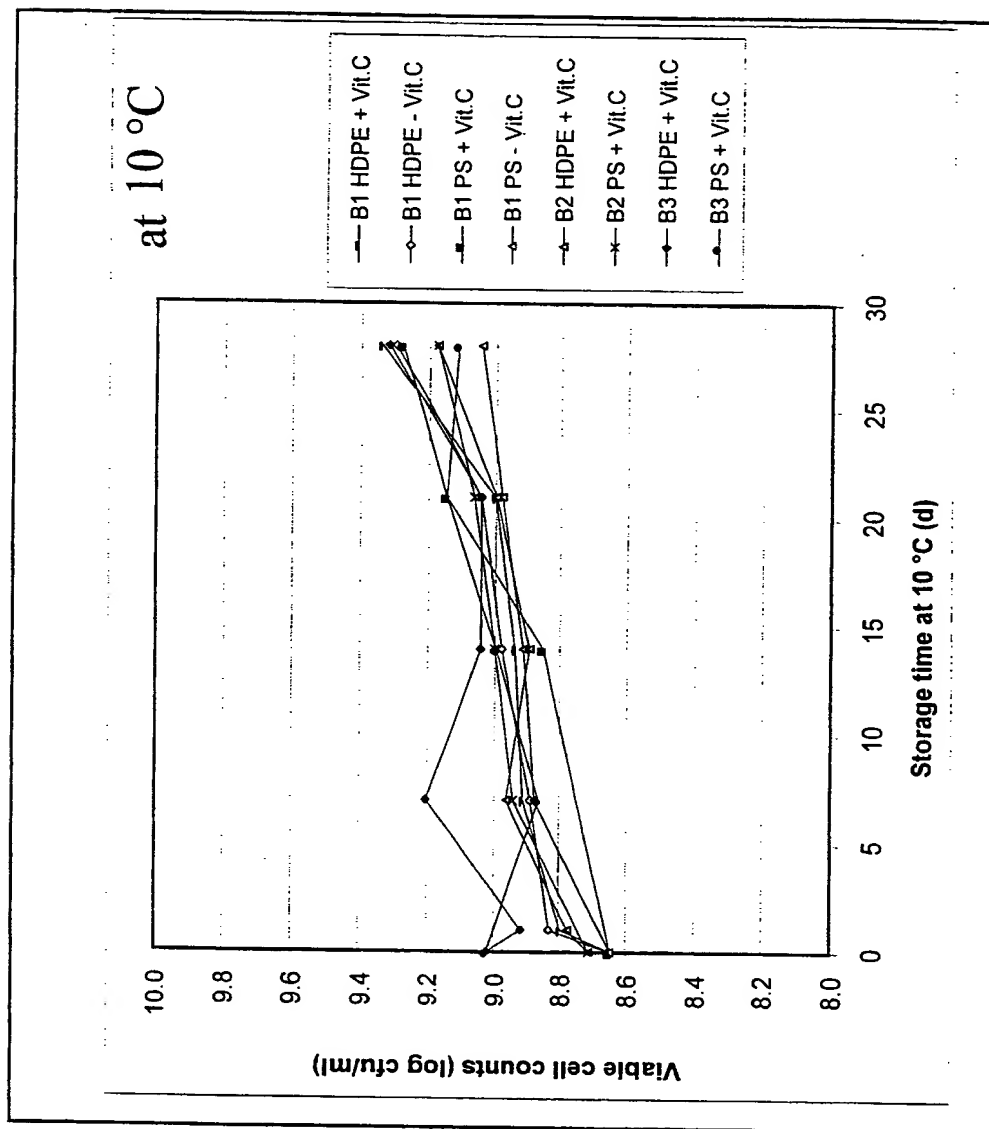
2 / 5

Fig. 2

Acidification of *L. casei* ST11 in different growth media

# Survival in cereal drink

Fig. 3



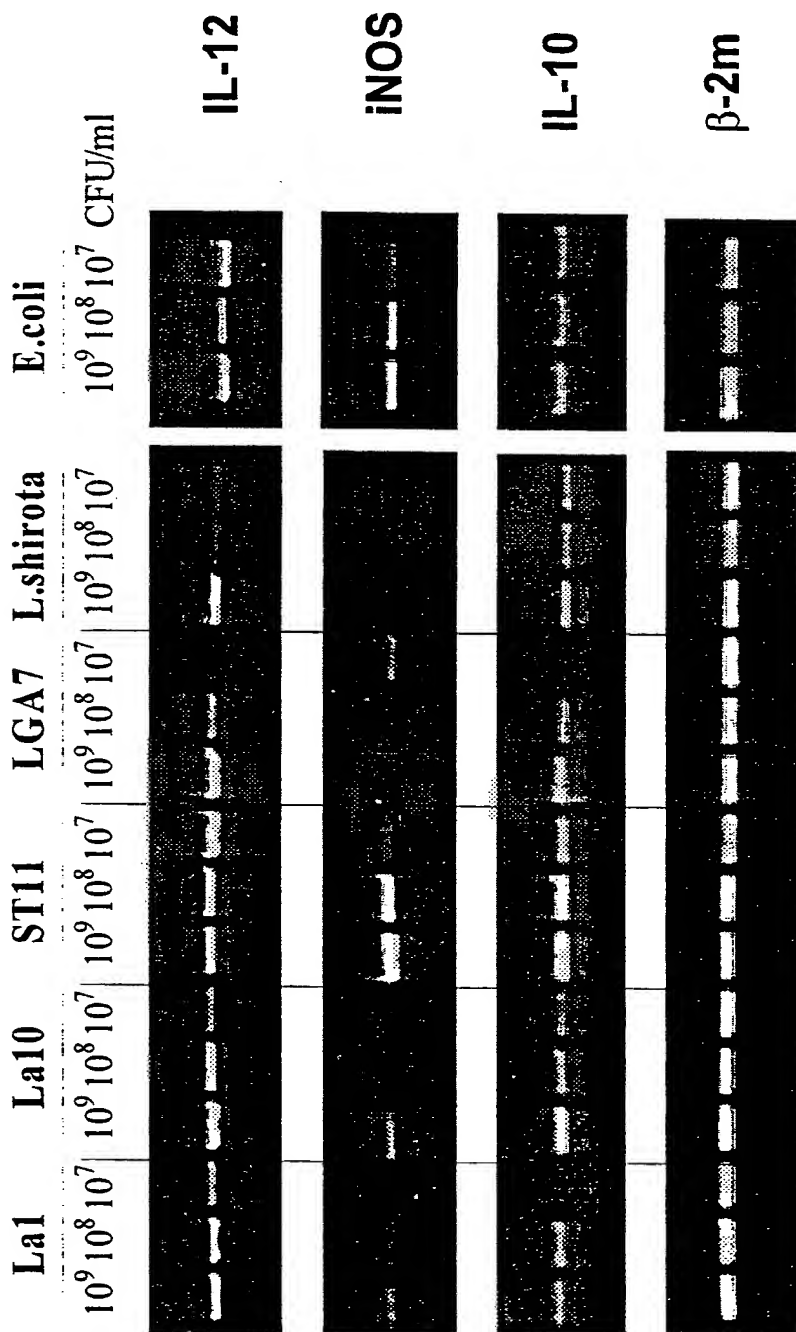
HDPE: High density poly ethylene

PS: polystyrene

Vit C: vitamin C

4/5

Fig. 4 Induction of cytokine mRNA by LAB in mouse macrophages



5/5

CYTOKINE RELEASE IN IVD 980916  
(ELISA 981103 & 980925)

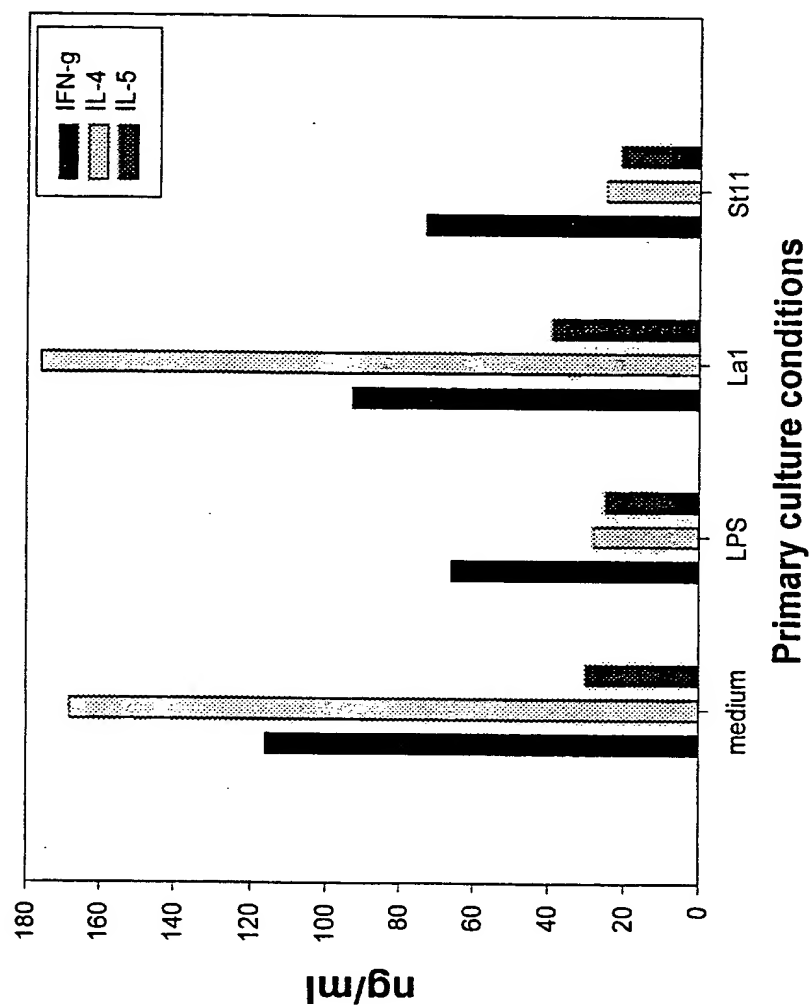


Fig. 5

Applicant's or agent's  
file reference

801 WO

International application No.

PCT PCT/EP00/01797

INDICATIONS RELATING TO DEPOSITED MICROORGANISM  
OR OTHER BIOLOGICAL MATERIAL

(PCT Rule 13bis)

A. The indications made below relate to the deposited microorganism or other biological material referred to in the description on pages <u>3, 5, 7, 18</u> , line s <u>25, 12, 12, 16</u>	
B. IDENTIFICATION OF DEPOSIT <span style="float: right;">Further deposits are identified on an additional sheet <input type="checkbox"/></span>	
Name of depositary institution CNCM COLLECTION NATIONALE DE CULTURES DE MICROORGANISMES	
Address of depositary institution (including postal code and country)  Institut Pasteur 28, Rue du Docteur Roux, F-75724 Paris Cedex 15	
Date of deposit  12.01.1999	Accession Number  I-2116
C. ADDITIONAL INDICATIONS (leave blank if not applicable) <span style="float: right;">This information is continued on an additional sheet <input type="checkbox"/></span>	
D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)	
E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)	
The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")	

For receiving Office use only	For International Bureau use only
<input type="checkbox"/> This sheet was received with the international application	<input type="checkbox"/> This sheet was received by the International Bureau on: <b>26 MAY 2000</b>
Authorized officer	Authorized officer

# INTERNATIONAL SEARCH REPORT

Original Application No

PCT/EP 00/01797

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A61K35/74 C12N1/20 A23L1/29 A23C9/152 //(C12N1/20, C12R1:225)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 577 903 A (NESTLE SA) 12 January 1994 (1994-01-12) cited in the application the whole document	1,6-11
X	WO 98 06411 A (DICOFARM SPA ;GUANDALINI STEFANO (IT)) 19 February 1998 (1998-02-19) the whole document	1-11
X	US 5 837 238 A (MOLLSTAM BO ET AL) 17 November 1998 (1998-11-17) the whole document	1,2,6-11
	-/-	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

5 June 2000

Date of mailing of the international search report

13/06/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Fernandez y Branas, F



Final Application No

**C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT**

Form PCT/SA/210 (continuation of second sheet) (July 1992)

**Final Application No**

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

1

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 00/01797

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 0577903	A	12-01-1994	AT 161181 T	15-01-1998
			AU 4158893 A	13-01-1994
			CA 2099855 A	07-01-1994
			CZ 9301342 A	19-01-1994
			DE 69223615 D	29-01-1998
			DE 69223615 T	09-04-1998
			DK 577903 T	06-04-1998
			ES 2111625 T	16-03-1998
			FI 933001 A	07-01-1994
			GR 3025971 T	30-04-1998
			HU 66632 A	28-12-1994
			JP 2672247 B	05-11-1997
			JP 6098782 A	12-04-1994
			NO 932407 A	07-01-1994
			NZ 248056 A	28-08-1995
			PL 299543 A	21-02-1994
			SK 71193 A	08-06-1994
			US 5578302 A	26-11-1996
WO 9806411	A	19-02-1998	IT RM960571 A	09-02-1998
			AU 3863997 A	06-03-1998
			EP 0918531 A	02-06-1999
US 5837238	A	17-11-1998	AU 3154897 A	05-01-1998
			EP 0923293 A	23-06-1999
			PL 330324 A	10-05-1999
			WO 9746104 A	11-12-1997
EP 0861905	A	02-09-1998	IT MI970426 A	27-08-1998
WO 9533046	A	07-12-1995	IT 1269838 B	15-04-1997
			IT 1274733 B	24-07-1997
			AT 163042 T	15-02-1998
			AU 686389 B	05-02-1998
			AU 2613995 A	21-12-1995
			BR 9507752 A	07-10-1997
			DE 69501591 D	12-03-1998
			DE 69501591 T	10-06-1998
			DE 760848 T	28-08-1997
			EP 0760848 A	12-03-1997
			ES 2099056 T	16-05-1997
			FI 964681 A	08-01-1997
			GR 97300016 T	31-05-1997
			GR 3026758 T	31-07-1998
			HU 75555 A	28-05-1997
			JP 10500577 T	20-01-1998
			NO 964966 A	23-01-1997
			NZ 287420 A	19-12-1997
			US 5709857 A	20-01-1998
WO 9929833	A	17-06-1999	SE 510813 C	28-06-1999
			AU 1896899 A	28-06-1999
			SE 9704577 A	09-06-1999